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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,080	10/31/2001	Kevin S. Stein	4470-00613	3540
26753	7590	05/05/2004		
ANDRUS, SCEALES, STARKE & SAWALL, LLP 100 EAST WISCONSIN AVENUE, SUITE 1100 MILWAUKEE, WI 53202			EXAMINER PIAZZA CORCORAN, GLADYS JOSEFINA	
			ART UNIT 1733	PAPER NUMBER
DATE MAILED: 05/05/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/002,080	STEIN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Gladys J Piazza Corcoran	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-6, 10, 11 and 13 is/are rejected.
- 7) ☒ Claim(s) 7-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Marschke '375 (US Patent No. 6,602,375) or Marschke '263 (US Publication No. 2003/0075263).

The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Marschke '375 and '263 both disclose an apparatus for forming a single face corrugated paperboard web, with a heated fluted bonding roll (bonding roll 11) capable of having adhesive applied to the flute tips of a corrugated medium web on the bonding roll (glue roll 15), a generator roll (roll 17) for bringing the liner web into initial contact with the glued flute tips of the corrugated medium on the bonding roll to form a composite single face web on the bonding roll, and a contact roll (soft contact roll 19)

having an axis of rotation parallel to the rotational axis of the bonding roll (see figures) and mounted closely spaced from and immediately downstream of the generator roll to lightly press the single face web against the bonding roll with a radial force distributed uniformly across the width of the single face web and capable of spreading the adhesive between the flute tips and the liner before gelatinization of the adhesive ('375: column 3, lines 30-68; '263: [0015]).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marschke '375 (US Patent No. 6,602,375) or Marschke '263 (US Publication No. 2003/0075263) as applied to claim 1 above and further in view of Barney et al. (US 5,614,048).

Marschke '375 and '263 disclose a contact roll as claimed, however it appears that neither discloses the particulars of the structure of the contact roll. It is well known in the art to provide for support structures for pressing rolls for varying the position of the roll radially with respect to the bonding roll in single facers. For example, Barney discloses a single facer apparatus where a pressure roll includes a contact roll end support mechanism operative to vary the position of the contact roll radially with respect to the bonding roll in order to adjust the pressure of the contact roll against the bonding

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roll (column 4, 16-19). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the apparatus as shown by Marschke '325 and '263 with a supporting mechanism for varying the position of the contact roll in order to adjust the pressure of the contact roll against the bonding roll as is well known and exemplified by Barney.

As to claim 10, Marschke '325 and '263 disclose a method of enhancing the glue bond between a medium web and a liner web in a single facer apparatus for forming a single face corrugated paperboard web from a liner web (16) and a corrugated medium web (13), with a heated fluted bonding roll (11) on which the medium web is corrugated, a glue applicator (15) that applies a starch based adhesive to the flute tips of the corrugated medium web while the medium web is on the bonding roll and a generator roll (17) that brings the liner web into initial tangent contact with the glued flute tips of the corrugated medium web on the bonding roll to form the single face web by positioning a rotatable contact roll (19) on a rotational axis parallel to the axis of rotation of the bonding roll closely adjacent and immediately downstream of the generator roll (see figures), and loading the contact roll against the single face web with a light force uniformly distributed across the width of the web ('375: column 3, lines 30-68; '263: [0015]). Such force is considered to be sufficient to spread the adhesive between the flute tips and the liner before gelatinization of the adhesive and such would have been readily apparent to one of ordinary skill in the art at the time of the invention.

Marschke '375 and '263 disclose providing a contact roll as claimed, however it appears that neither discloses the particulars of the structure of the contact roll. It is

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well known in the art to provide for support structures for pressing rolls for varying the position of the roll radially with respect to the bonding roll in single facers for forming single facer webs. For example, Barney discloses a method of forming a single face web with a single facer apparatus where a contact roll includes a contact roll end support mechanism operative to vary the position of the contact roll radially with respect to the bonding roll in order to adjust the pressure of the contact roll against the bonding roll (column 4, 16-19). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of forming a single face web in a single facer apparatus as shown by Marschke '325 and '263 with a supporting mechanism for varying the position of the contact roll in order to adjust the pressure of the contact roll against the bonding roll as is well known and exemplified by Barney.

As to claim 11, Barney discloses applying a force of about 5 pounds per lineal inch (column 5, lines 54-59).

5. Claims 3, 5, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marschke '375 (US Patent No. 6,602,375) or Marschke '263 (US Publication No. 2003/0075263) in view of Barney et al. (US 5,614,048) as applied to claim 2 above and further in view of Isowa (GB 2,308,392).

The references Marschke '375, '263 and Barney do not specifically disclose the particulars of the contact roll. As to claim 3, Isowa discloses a known construction of the particulars of a pressure roll in a single facer where the roll includes a center dead shaft (rotating axis) including stub shaft ends connected to said end support mechanism (frame 38) and an outer shell (lace) rotatably supported on said dead shaft by a plurality

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of axially spaced bearings (44). As to claim 5, Isowa also discloses an eccentric coupling (40) fixed to each stub shaft end providing connection to a pivot shaft journaled for limited rotation on a pivot axis parallel to the axis of the dead shaft and an actuator connected to each pivot shaft an operative to provide the limited rotation to vary the position of the contact roll. As to claim 6, Isowa appears to disclose an actuator of gears and a motor to vary the position of the contact roll, however providing a pneumatic cylinder with a cylinder rod end is considered to be a functionally equivalent alternative as is well known to one of ordinary skill in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the apparatus of a single facer as shown by Marschke '325, '263 and Blarney with well known particulars of the contact roll in order to provide the proper mechanism for properly moving the contact roll as exemplified by Isowa.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marschke '375 (US Patent No. 6,602,375) or Marschke '263 (US Publication No. 2003/0075263) in view of Barney et al. (US 5,614,048) and Isowa (GB 2,308,392) as applied to claim 3 above and further in view of Lehmann (US Patent No. 4,136,546) and/or Kayser et al. (US Patent No. 6,073,548) as further taken with Giugliano et al. (US Patent No. 6,155,319).

It is well known in the art to form the outer shells of pressure rollers from an elastic liner such as a steel inner liner with a rubber outer cover in order to provide deformable pressure with the roll. For example, Lehmann discloses an example of a pressure roll where the outer shell is formed of an elastic, with at least part elastomeric

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material and also discloses using a steel tube (column 4, lines 16-30). Kayser provides another example where an outer shell for a pressure roll is made elastic by forming the shell from a steel liner and an elastic outer layer (column 3, lines 17-25; column 7, lines 41-53). This would have been particularly obvious in view of the teaching by Giugliano which discloses that pressure rolls in single facers should have an elastic outer layer in order to reduce vibrations in the apparatus and to reduce visible marks on the paper in the zones subject to compression (column 4, lines 1-35). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the single facer as shown by Marschke '325, '263, Barney, and Isowa with an outer shell formed of a steel inner liner and an elastic or rubber outer cover as is considered well known in the art as exemplified by Lehmann and Kayser in order to provide an elastic pressure roll to reduce vibrations and marks on the paper as shown by Giugliano.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marschke '375 (US Patent No. 6,602,375) or Marschke '263 (US Publication No. 2003/0075263) and Barney et al. (US Patent No. 5,614,048) as applied to claim 10 above and further in view of Lehmann (US Patent No. 4,136,546) and/or Kayser et al. (US Patent No. 6,073,548) as further taken with Giugliano et al. (US Patent No. 6,155,319).

It is well known in the art to form the outer shells of pressure rollers from an elastic liner such as a steel inner liner with a rubber outer cover in order to provide deformable pressure with the roll. For example, Lehmann discloses an example of a pressure roll where the outer shell is formed of an elastic, with at least part elastomeric



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8. Claims 1-3, 5, 6, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isowa (GB 2,308,392) in view of Osgood (US 3,919,029).

Isowa teaches a single-faced corrugated sheet making machine that includes first and second corrugating rolls (12 and 14) for forming corrugations on a core paper web (16), a pasting mechanism for pasting the crest portions of the corrugated paper web, and two pressure rolls (34 and 36) which are disposed on the outer surface of the second corrugating roll (14) to press and stick a liner (26) to the core paper web (see Figures; Page 9, lines 5-34). The second pressure roll (36) is recognized as reading on applicant's claimed "contact roll" as it is mounted downstream of the line of initial tangent contact of the liner web and acts to press the liner web against the corrugating

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roll (14). As to the limitations that the contact roll is closely spaced from and immediately downstream of the generator roll, such is met by the rolls in Isowa, for example see figures 7-9. As to the limitation that the contact roll lightly presses the single face web against the bonding roll, it also appears that Isowa meets this limitation by at least being capable of lightly pressing and further because Isowa teaches that the pressure applied is less than those of previous single facers. Furthermore, the contact roll in Isowa is considered capable of spreading the adhesive between the flute tips and the liner before gelatinization of the adhesive. It appears that Isowa teaches all the limitations of claim 1, with the exception of disclosing that the corrugated roll (14) is heated.

It is considered well known in the corrugating arts to provide the bonding roll in a single facer with heat in order to help with the corrugating of the medium web and the bonding of the single face web. For example, Osgood discloses a single facer machine for manufacturing single face corrugated paperboard is applied as evidence that it is known in the corrugated art to employ heated corrugated rolls to aid in shaping the core webs and bonding the core webs to liners (Col. 3, lines 41-43). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the corrugating roll (14) of Isowa with heat as such is well known in the art as evidenced for example by Osgood in order to aid in the shaping of the core web and aid in providing heat to the bonding adhesive.

As to claims 2, 3, 5, Isowa teach positioning said pressure roll (36) on a moving frame (38) which is constructed to be movable with respect to the frame body which

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holds the corrugating rolls, wherein the pressure roll (36) is controllable to be moved between an operating position near the corrugating roll (14) and a retracted position apart from the corrugating roll (14). Isowa further teach that pressure roll (36) is independently movable to approach and separate from the corrugating roll by an eccentric mechanism (40) and disclose the pressure roll includes a rotating axis inserted into a through hole of a lace (42) that is rotatably pivoted at the moving frame (38) via bearing (44). It appears Isowa further discloses the use of gears and a motor (e.g. an actuator) to work through the lace to cause the pressure roll to eccentrically move (Page 11, line 10 – Page 12, line 3). As to claim 6, Isowa appears to disclose an actuator of gears and a motor to vary the position of the contact roll, however providing a pneumatic cylinder with a cylinder rod end is considered to be a functionally equivalent alternative as is well known to one of ordinary skill in the art. Furthermore, Osgood is cited as evidence that as an alternative to mechanical means, a pneumatic cylinder may be used to exert force on a pressure roll to bias said pressure roll against a corrugating roll (col. 3, lines 34-40). It therefore would have been obvious to one of ordinary skill in the art at the time of the invention to alternatively employ a pneumatic cylinder as the actuator of Isowa as Isowa's embodiment of employing gears and motors appears to be exemplary in nature, wherein Osgood discloses that pneumatic cylinders are known functionally equivalent alternatives to mechanical means and one of ordinary skill in the art would readily appreciate that only the expected results would be achieved.

As to claim 10, as discussed above, Isowa also discloses a method of enhancing the glue bond between a medium web and a liner web in a single facer apparatus for forming a single face corrugated paperboard web from a liner web and a corrugated medium web, with a fluted bonding roll on which the medium web is corrugated, a glue applicator that applies a starch based adhesive to the flute tips of the corrugated medium web while the medium web is on the bonding roll and a generator roll that brings the liner web into initial tangent contact with the glued flute tips of the corrugated medium web on the bonding roll to form the single face web by positioning a rotatable contact roll on a rotational axis parallel to the axis of rotation of the bonding roll closely adjacent and immediately downstream of the generator roll (see figures 7-9), and loading the contact roll against the single face web with a light force uniformly distributed across the width of the web (the force applied in Isowa is disclosed as being lighter than that of previous single facers). Such force is considered to be sufficient to spread the adhesive between the flute tips and the liner before gelatinization of the adhesive and such would have been readily apparent to one of ordinary skill in the art at the time of the invention. As discussed above, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of forming a single face web as shown by Isowa with a heated bonding roll as is considered well known in the art and further exemplified by Osgood.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isowa (GB 2,308,392) in view of Osgood (US 3,919,029) as applied to claim 10 above, and further in view of Barney (US Patent No. 5,614,048).

Isowa does not specifically disclose the particular force provided by the contact roll, however does disclose providing light pressure in order to reduce markings on the single faced web. It is known in the art as exemplified by Barney to apply a force of about 5 pounds per lineal inch (column 5, lines 54-59) in order to provide enough pressure to bond the single face web but light enough to not produce markings on the single faced web. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of enhancing the glue bond in a single face web as shown by Isowa and Osgood by providing a pressure of about 5 pounds per lineal inch for the contact roll as would have been well within the purview of one of ordinary skill in the art and as further exemplified by Barney in order to provide enough pressure to bond the single face web but light enough to not produce markings on the single faced web. Only the expected results would be attained.

10. Claims 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isowa (GB 2,308,392) in view of Osgood (US 3,919,029) as applied to claims 3 and 10 above, and further in view of Lehmann (US Patent No. 4,136,546) and/or Kayser et al. (US Patent No. 6,073,548) as further taken with Giugliano et al. (US Patent No. 6,155,319).

It is well known in the art to form the outer shells of pressure rollers from an elastic liner such as a steel inner liner with a rubber outer cover in order to provide deformable pressure with the roll. For example, Lehmann discloses an example of a pressure roll where the outer shell is formed of an elastic, with at least part elastomeric material and also discloses using a steel tube (column 4, lines 16-30). Kayser provides

another example where an outer shell for a pressure roll is made elastic by forming the shell from a steel liner and an elastic outer layer (column 3, lines 17-25; column 7, lines 41-53). This would have been particularly obvious in view of the teaching by Giugliano which discloses that pressure rolls in single facers should have an elastic outer layer in order to reduce vibrations in the apparatus and to reduce visible marks on the paper in the zones subject to compression (column 4, lines 1-35). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the single facer apparatus and method as shown by Isowa and Osgood with an outer shell formed of a steel inner liner and an elastic or rubber outer cover as is considered well known in the art as exemplified by Lehmann and Kayser in order to provide an elastic pressure roll to reduce vibrations and marks on the paper as shown by Giugliano.

***Allowable Subject Matter***

11. Claims 7-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: It is considered generally known in the corrugating arts to provide rolls that are "crowned" (tapered on the ends with a larger diameter in the center), however, absent any additional pertinent prior art, no prior art was found to show or suggest providing a contact roll as claimed where a dead shaft includes a larger diameter axial center portion joining reduced diameter opposite end portions and an outer shell having an

axial center portion having greater wall thickness joining opposite shell end portions of reduced wall thickness in the claimed environment.

***Response to Amendment***

1. The declaration filed on February 19, 2004 under 37 CFR 1.131 has been considered but is ineffective to overcome the Marschke '325 or '263 references.
2. The evidence submitted is insufficient to establish a conception of the invention prior to the effective date of the Marschke '325 and '263 references. While conception is the mental part of the inventive act, it must be capable of proof, such as by demonstrative evidence or by a complete disclosure to another. Conception is more than a vague idea of how to solve a problem. The requisite means themselves and their interaction must also be comprehended. See *Mergenthaler v. Scudder*, 1897 C.D. 724, 81 O.G. 1417 (D.C. Cir. 1897). The declaration and the attached drawings do not show all the required claim limitations as met by the Marschke '325 and '263 references. For example, there is no indication that the drawings of the soft contact roll are to be used in a single facer machine. See MPEP §715.02.

***Response to Arguments***

3. Applicant's arguments filed October 14, 2003 have been fully considered but they are not persuasive.

Applicant argues on page 6 that the references Isowa and Osgood both disclose "pressure roll" single facers which are unable to handle the requirements of high speed and lighter weight papers. The claim limitations as currently written do not exclude the "pressure roll" single facer as disclosed by Isowa.

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Applicant argues on pages 6-7 that pressure rollers have a well-known meaning in the art of having high pressure, as exemplified by the pressure disclosed in Osgood. It is noted that the reference Osgood is only relied on to show the well known concept of providing the bonding roller with heat. It is further noted that applicant's claims do not exclude the pressure roller system as shown by Isowa. Finally, Isowa does disclose that the pressure roller system applies less pressure than those of previous systems.

### ***Conclusion***

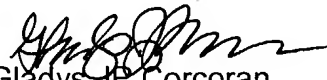
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gladys J Piazza Corcoran whose telephone number is (571) 272-1214. The examiner can normally be reached on M-F 8am-5:30pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Gladys JP Corcoran  
Examiner  
Art Unit 1733

GJPC